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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
FORTUNA, JOSE A				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/534,047

Applicant(s)

KUMAMOTO ET AL.

Examiner

José A. Fortuna

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 19-24 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The ratio of non-fiber components to pulp or fibers critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure.

See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure is very clear, see page 8, lines 4-12, as to the ratio of the components discussed above. The paragraph, teaches that if the ratio is not within certain levels the invention could not be obtained, i.e., the formed sheet would not have the desired properties, the paragraph has been included below, for applicants' convenience, (emphasis added).

The fibrous material content in the molded sheet is preferably 2% to 50% by weight, more preferably 5 to 40% by weight. Where the content is less than 2% by weight, the effect for preventing the oxidizable metal and the moisture retaining agent from falling off is reduced, and the molded sheet tends to be very brittle. If the fibrous material content is more than 50% by weight, a heat generating molded article will have an increased heat capacity for the amount of heat generated, and a reduced rise in temperature results. Furthermore, the proportion of the other components including the oxidizable metal and the moisture retaining agent is so low that the resulting molding sheet can fail to exhibit desired heat generating performance.

3. Claims 21 and 23 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The breaking length critical or essential to the practice of the

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invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure, see page 9 lines 6-14, is very clear as to the range of the breaking length of the sheet of the invention. The paragraph, teaches that if the range is not within certain levels the invention could not be obtained, i.e., the formed sheet would not have the desired properties, the paragraph has been included below, for applicants convenience, (emphasis added).

The molded sheet has a breaking length of 100 to 4000 m, preferably 200 to 3000 m. Where the breaking length is shorter than 100 m, it is difficult to form the sheet in a stable manner without breaks or tears; the resulting sheet is difficult to fabricate due to liability to breaking or tearing; and the final product is apt to lack in elasticity, crumble easily, and give discomfort to a wearer. A molded sheet with a breaking length exceeding 4000 m, which should contain large amounts of the fibrous material and the binding component making up the molded sheet, tends to be hard and rigid and to have poor heat generating performance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(c), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claims 1-3, 7, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 1-201253, referred hereafter as JP'253, (USPTO Patent English Translation has been used) in view of Suenaga et al., US Patent No. 6,133,170.

JP'253 teaches a method of making a web, heat generating article, in which said web/paper is formed by papermaking methods using an oxidizable metal powder, a moisture retaining agent, a fibrous material and an electrolyte, see abstract. The JP'253 teaches also the same metal powder, e.g., iron powder, same moisture retaining agent, e.g., activated carbon, and same electrolytes, e.g., chloride salts, page 4, ¶s 2-5. JP'253 teaches thickness of the web that falls within the claimed range, i.e., from 0.2 to 10 mm, (page 7, ¶-3). The JP'253 teaches ratio of the of the other components in the sheet of more than 50% by weight in either wet or dry basis, see paragraph bridging pages 6 and 7 of the translation and the examples, especially, Table 1. The JP'253 does not explicitly teach the breaking length as claimed. However, breaking length is a recognized result

effective variable, i.e., the breaking length of a sheet can be controlled to be within certain levels by controlling for example the Freeness of the pulp, adding wet strength agent, by the use of blends of fibers, e.g., softwood and synthetic fibers for greater strength, hardwood to decrease the strength, use Crosslinked fibers, etc. It has been held that “[T]he discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); *In re Aller*, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1995). Moreover, the secondary reference, Suenaga et al., further evidences that breaking strength within the claimed range can be obtained by the use of blended pulp, use of crosslinked fibers for example, see Table 1, that shows breaking lengths within the claimed range for papers/web/sheet having thickness and basis weight within the claimed/disclosed range. Therefore, using the technique disclosed by Suenaga et al. to form the sheet of the JP’253 would have been obvious to one of ordinary skill in the art as an obvious optimization process. Note that it has been held that it is obvious to try, choosing from a finite number of identified, predictable solutions with a reasonable expectation of success. See recent Board decision *Ex parte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (Citing KSR, 82 USPQ2d at 1396).

1. Claims 4-6, 8, 11-12, 16-20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP’253 in view of Suenaga et al. as applied to claims 1-3 above, and further in view of Koiso et al., US Patent Nos. 5,975,074 or 6,127,294.

The only difference between the claimed method and the method of claimed invention is that step of the addition of the electrolyte, i.e., JP’253 teaches that the electrolyte is added

to the papermaking slurry. However, Koiso et al. in both patents, teach that electrolytes for heating elements can be added either to the slurry or to the intermediate web, after it has been dried, see Koiso'074, column 2, lines 54-55; column 4, lines 33-37; Koiso' 294, column 5, lines 45-52. Note that Koiso et al. teach the same components as claimed in their heat element. Therefore, using, impregnating the dried web with the electrolyte taught by Koiso et al., instead of adding along with slurry, it would have been obvious to one of ordinary skill in the art, since he/she would have reasonable expectation of success if the electrolyte were either added to the slurry or sprayed/impregnated onto the dried web, as taught by Koiso et al.

Note that for claims 19 and 23-24 the intermediate sheet, i.e., the sheet before the impregnation with the electrolyte would be the same as the ones claimed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9-10 and 21 and 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP'253, cited above.

Claims 9-10 and 21-22 are product by process claims and the cited reference teaches a similar paper made using a slightly different method. However, In the event any differences can be shown for the product -by-process claims 9-10 and 21-22 as opposed to the product taught by the reference JP'253 such differences would have been obvious to one of ordinary skill in the art

as routine modification of the product in the absence of a showing unexpected results, see *In re Thorpe*, 227 USPQ 964 (CAFC 1985).

As the afore mentioned claim is a product by process claim, it is deemed that "[A]ny difference imparted by the product by process claims would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicants to establish that their product is patentably distinct, ..." *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Further, "[P]rocess limitations are significant only to the extent that they distinguish the claimed product over the prior art product." *In re Luck*, 177 U.S.P.Q. 523 (1973).

Note that the products by process of claims 21 and 23 are not limited by any properties of the product, i.e., there is no limitation as to the breaking length, the ratio of fibers to other components, etc.

8. Claims 19 and 23-2 4are rejected under 35 U.S.C. 102(b) as being anticipated by Pattilloch et al., US Patent No. 3,022,213 or Snyder, US Patent No. 1,991,824.

Both references, Pattilloch et al. and Snyder, teach a molded sheet made by a papermaking process, the sheet containing a oxidazable metal, e.g., Zinc, papermaking fibers, e.g., wood fibers or mineral fibers, and a moisture retaining agent, e.g., calcium carbonate or silica, see Pattilloch et al., column 1, line 40 through column 2, line 64; Snyder, column 2, line 22 through column 3, line 15.

9. Claims 21 and 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Koiso et al., US Patent Nos. 5,975,074 or 6,127,294, cited above.
10. Claims 21 and 23 are product by process claims and the cited reference teaches a similar paper made using a slightly different method. However, In the event any differences can be shown for the product -by-process claims 21 and 23 as opposed to the product taught by the reference Koiso et al., US Patent Nos. 5,975,074 or 6,127,294, such differences would have been obvious to one of ordinary skill in the art as routine modification of the product in the absence of a showing unexpected results, see *In re Thorpe*, 227 USPQ 964 (CAFC 1985).

As the afore mentioned claim is a product by process claim, it is deemed that "[A]ny difference imparted by the product by process claims would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicants to establish that their product is patentably distinct, ..." *In re Brown*, 173 U.S.P.Q. 685, and *In re Fessmann*, 180 U.S.P.Q. 324.

Further, "[P]rocess limitations are significant only to the extent that they distinguish the claimed product over the prior art product." *In re Luck*, 177 U.S.P.Q. 523 (1973).

Note that the products by process of claims 21-22 are not limited by any properties of the product, i.e., there is no limitation as to the breaking length, the ratio of fibers to other components, etc.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible

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harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 7-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 11 of copending Application No. 10/490,120. Although the conflicting claims are not identical, they are not patentably distinct from each other because the overlapping on the scope of the claims. The only difference between the methods is that the copending application recites the making of an "article," while the present application recites a molded "sheet". As it can be seen the "article" encompasses the "sheet."

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225

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USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12-23 of copending Application No.

10/566,471. Although the conflicting claims are not identical, they are not patentably distinct from each other because the only difference between the claims is the embossing of the sheet which is explicitly claimed in the co-pending application. However, the embossing of sheets is a very common process in the papermaking industry, which is used, *inter alia*, to increase bulk or join multiple plies of webs and therefore, embossing the sheets of the present application is within the levels of one of ordinary skill in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

14. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that sheet of the present application is different than the cited prior art, because there is no disclosure in the JP'253 of the content of the non-fiber materials being over

50% by weight. This is unconvincing, since the JP'253 teaches ranges of non-fiber components greater than 50% by weight, see Table 1.

Applicants also argue that the reference teaches away from using the thickness as claimed, since they teach a preferred thickness between 2-8 mm. This is also unconvincing, because they clearly teach that the sheet could be made with thickness between 0.2 to 10 mm, which covers the claimed range. Also, it has been held that “[R]eferences are not limited to preferred embodiments.” *In re Boe*, 148 USPQ 507 (CCPA 1966). Also, it has been held that all the disclosure in a reference must be evaluated for what they fairly teach one of ordinary skill in the art. *In re Smith*, 32 CCPA 959, 148 F.2d 351, 65 USPQ 167; *In re Nehrenberg*, 47 CCPA 1159, 280 F.2d 161, 126 USPQ 383; and in *In re Watanabe*, 50 CCPA 1175, 315 F.2d 924, 137 USPQ 350.

Also applicants argue that the examiner has not established that the breaking length is an effective variable that one of ordinary skill in the art would recognize to optimize. This is also considered unconvincing, because the secondary reference shows that the breaking length can be altered. The statement of the secondary reference supports that the breaking length is a result effective variable. The degree of difficulty of altering the property would have been recognized by the one of skill in the art. Moreover, the recognition that a property could be optimized does not have to be explicitly disclosed in a prior art, but can be recognized by one of ordinary skill in the art. For this particular case one of ordinary skill in the art would clearly recognize that a sheet has to have certain strength to be used as a commercial product, i.e., a product should not break easily and should not be so strong that cannot be easily cut, either by the consumer or during the converting operation.

Applicants refer to comparative example to indicate that the breaking length is impacted by more than mere optimization process. However, there is no enough data to conclude anything, from the example; it doesn't even tell you the amount of components, or which components were used in the examples. The only thing that can be concluded, from example 5, is that sometimes the breaking length could exceed 4000 m and that was already known. The difficulty of the optimization does not have any bearing on the fact that such variable could be controlled/optimized to be within certain desired range.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure in the art of "Heat Generating Molded Sheets."

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José A. Fortuna whose telephone number is 571-272-1188. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/José A Fortuna/
Primary Examiner
Art Unit 1791

JAF